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STUDIES OF OCCUPATIONS
IN
AGRICULTURE, FORESTRY, AND
ANIMAL INDUSTRY

BY
FREDERICK J. ALLEN

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PREFACE AND INTRODUCTION

THE growing complexity of the world of occupations, the consequent need for definite information for use in vocational guidance, and the increasing demand for trustworthy data for the class in occupations have led to the preparation of this Bulletin. It is offered to young people in the hope that they will find efficient service and personal satisfaction in the work of their chosen occupation. Every one should know about the farmer and the workers associated with him, for their occupations are fundamental. While liberal Federal and state provision have been made for agricultural education, printed information suitable for use in the vocational counseling of young people in this great field has been lacking. This study presents the important facts of the field as a basis for criticism, further investigation, and choosing a life career.

This bulletin is primarily an expansion of Section I of the author's *A Guide to the Study of Occupations*, into brief but comprehensive analyses of the occupations there presented. A few occupations of secondary importance are added, to make the treatment of the great field reasonably exhaustive. The plan of treatment here followed is that laid down in "How to Use This Book," in the introductory part of the *Guide*. Thus the use of the Bulletin may be supplemented by the use of the *Guide*, both for method and for a critical treatment of the references here given and for additional references.

The occupational material presented in these pages has been prepared with great care, whether drawn from abundant or scanty sources and experience, country-wide in nature. It has been the purpose of the Bulletin to include only fundamental information, on which constructive teaching may build and to which it may add according to the age and needs of the pupil, or the advancement of a class. This material has been submitted for critical treatment and suggestion to experts on the staff of the Massachusetts State Board of Education and to the faculty of the Massachusetts Agricultural College, as well as to other authorities in the occupations presented, and it bears the results of such aid in its present

form. Special acknowledgment for valuable coöperation is made to the following persons:

- MR. RUFUS W. STIMSON,
State Supervisor of Vocational Agricultural Education,
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And MR. RALPH J. WATTS, Secretary.

- MR. DWIGHT L. HOOPINGARNER,
Executive Counsel on Labor Relations, Boston.
(Formerly associated with the fishing industry.)

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States Relations Service, who provided the latest statistical material upon agriculture, forestry, and animal industry, from the returns of the Fourteenth Census.

This study is especially designed for use in the junior high and high school and in agricultural schools and classes. The analyses of the vocations are presented under the following nine important divisions:

1. IMPORTANCE.
2. WORK DONE.
3. ADVANTAGES.
4. DISADVANTAGES.
5. PREPARATION.
6. OTHER REQUIREMENTS.
7. INCOME.
8. EFFECT ON THE WORKER.
9. REFERENCES.

The following suggestions and outline of various methods used in class work are offered for the help of the teacher:

1. The recitation may take the ordinary form, with the teacher questioning children about the occupations treated in the Bulletin.

2. The analyses should be the basis for advance assignment and class discussion, with such additional information as a school library or neighborhood employments may make possible.

3. There may be a coöperative recitation, in which each child prepares and discusses before the class one particular phase of the subject.

4. There may be debates between members of the class upon the various phases of an occupation, the relative merits of two occupations, or upon an important labor problem.

5. There may be conversations between two or more pupils in regard to an occupation or employment problem.

6. The class exercises may take the form of a dramatic presentation of an occupation, of the importance, tasks, and other kinds of information for a group of occupations, or for securing, entering into, and making progress in employment.

7. Assignment may be made to the members of the class to give a typical day's work in a particular occupation.

8. Wherever the coöperation of workers and employers may be secured, students should be sent out to places of business and industry to secure information upon particular vocations. Thus a report might be brought back to a class upon the general work done on a particular farm.

9. Students should be directed or encouraged to ask questions of workers in particular occupations and to bring such first-hand information to the class discussion.

10. Students should be led to make a critical examination of each statement in this Bulletin and to see whether it applies to local conditions.

11. An occupation may be treated historically, as is done in the case of the farmer on page 6, or studied in connection with a science or other branch of school work.

12. Full use should be made of the statistical information given at the end of this Bulletin, and other Federal and state statistics should be added.

13. Students should contribute their own employment experience to the discussions of the class and bring before it their own employment problems.

The following list of points of interest under which questions may be asked to secure information upon vocations has been prepared by Dr. John M. Brewer, Director of the Harvard Bureau of Vocational Guidance. It may be used as an aid to class work in any vocational study.

A CHECK LIST FOR CONSTRUCTING OCCUPATIONAL
STUDIES AND FOR BRINGING OUT AND TESTING
VOCATIONAL INFORMATION

1. Importance:

1. Is this occupation really necessary?
2. Could society do without the service of this worker?
3. What would happen if workers should stop?
4. Is the product a necessity or a luxury?
5. Is it necessary always or only at one particular time of the year?

2. Work Done:

1. What different kinds of work are done by various people in the occupation?
2. Make a list of the different things the worker does when engaged at his task.
3. Outline the day's work of the worker.

3. Advantages:

- | | |
|------------------------------------|-----------------------------------|
| 1. Service to humanity? | 9. Friends and associates? |
| 2. Chance to learn? | 10. Hours? |
| 3. Ease of entrance? | 11. Vacations? |
| 4. Demand for workers? | 12. Good living? |
| 5. Steady work? | 13. Healthful work? |
| 6. Growing importance of vocation? | 14. Moral and ethical conditions? |
| 7. Interesting work? | 15. "Energizing" work? |
| 8. Promotions? | 16. Other points? |

4. Disadvantages:

(Use the same list as under 3. See if any of these questions apply.)

5. Preparation:

1. Does the worker use 8th grade arithmetic, drawing, or English?

2. Does the worker use geography or science?
3. How much high school education is a minimum requirement?
4. What studies are most useful? English literature, oral English, composition, algebra, geometry, mechanical drawing, freehand drawing, physics, chemistry, biology, physical education, history, civics, music, or other studies directly vocational?
5. Is a college education good preparation in helping the worker to be more useful?
6. Are there vocational courses to teach this occupation? Tell about them: admission requirements, length of course, cost, how conducted, advantages.
7. What preliminary experiences would help one prepare? Saturday or vacation opportunities?
8. Must the worker serve a preliminary or apprenticeship period? How, when, where?
9. What "stepping-stones" are there to successful service in the occupation?

6. Other Requirements:

1. Ability to get along with people?
2. Ability to follow directions?
3. Ability to lead other people?
4. Ability to use good English?
5. Cheerfulness?
6. Common sense; good judgment?
7. Courtesy?
8. Ideals of honesty?
9. Ideals of service and usefulness?
10. Initiative; resourcefulness?
11. Mechanical skill?
12. Orderliness; system; neatness?
13. Perseverance; industry?
14. Physical strength, health, and vigor?
15. Promptness; punctuality?
16. Responsibility; trustworthiness?

7. Income:

1. Can you estimate the yearly income under usual conditions of work? What are the wages per week, or month, or hour?

2. Can you arrange the different positions in the occupation in the order of their income to the worker?
3. What can you say about the pay at the beginning, and the increases as one obtains further experience?
4. What is the method of pay?
5. Does the worker receive enough pay to maintain an American standard of living?
8. **Effect on the Worker:**
 1. Social:
 - (a) Is he recognized as a useful member of society and given a proper place in society?
 - (b) Does his work help to make him more tactful and socially agreeable?
 2. Civic: Does the work help to make the worker a better citizen?
 3. Physical: Does the work have any effect on the worker's health?
 4. Recreational:
 - (a) Does the work give him time for proper recreation, and does it encourage helpful forms of recreation?
 - (b) Are there rest or recreational periods during the work hours?
 5. Mental life: Does the work stimulate the thinking of the worker?
 6. Moral life:
 - (a) Does the work help the worker to become a better person?
 - (b) Are the influences in the place of work good influences?
- . **General Considerations:**
 1. History, development, and future of the occupation.
 2. Relation to other occupations.
 3. Comparisons with other occupations.
 4. From what occupation one may enter this calling.
 5. Does the occupation lead to a better vocation?
 6. Instances of successful service in this occupation.
 7. Are the workers organized into unions or other associations?
 8. What laws influence or control the work or workers?
10. **References for Reading.**

STUDIES OF OCCUPATIONS IN AGRICULTURE, FORESTRY, AND ANIMAL INDUSTRY

1. THE DAIRYMAN

- 1. Importance:** The dairyman produces milk, cream, butter, and cheese. To provide these under sanitary conditions and bring them to the homes of the people are of the greatest importance to the health, and to the preservation of the lives of children and invalids.

On small farms the work of the dairyman and dairy farmer are usually combined; on large farms the two are separate, each carried on by a different set of workers. The treatment here given includes both, — the production of milk and the handling of it and its products in the dairy.

- 2. Work done:** Raising and selecting dairy cows; raising or buying hay, grains, and other forage for dairy feed; feeding and caring for animals; milking by hand or by machine, and separating cream; churning butter and making cheese; sometimes operating a creamery; and marketing products. On the farm or in the small dairy most work is done by hand; in the large dairy much of the work is done by machinery. The foreman and superintendent have to direct the work of others.
- 3. Advantages:** The healthful nature of the occupation, with much out-of-door activity; the fact that mental and physical activities are combined in dairying; the freedom of the occupation from seasonal idleness; the comparative independence of the dairy proprietor; the permanent demand for the products of the industry, insuring the worker of permanency of employment; the advantage of having the products of the dairy for one's own use; the pleasure of raising, caring for, and owning high grade dairy cattle.
- 4. Disadvantages:** The long hours necessary to make dairying profitable; the night work often imposed in milking in season to reach a market, or in distributing milk to customers; the all-round duties of the small dairy; the tiresome task of milking

by hand and of caring for the barn; the fact that a dairy must be near a large community or near a railroad or electric car line to make marketing most profitable; the high cost of establishing and maintaining a large dairy; the difficulty of constantly renewing one's herd of cows, and the constant danger of loss of animals by disease.

5. **Preparation:** Training must necessarily be different for the two lines of work connected with the occupation. Each worker, however, should know something of the entire field. A high school education and graduation from an agricultural college are desirable. Courses in a school of engineering would be helpful. The agricultural courses now given in many high schools provide valuable information and experience.

One may now find agricultural courses in many high schools, separate, and county schools, extension courses maintained by agricultural colleges, special lecture courses at these institutions, and lectures at dairymen's and farmer's conventions. Employees in the dairy may learn much by experience, especially if under the direction of men scientifically trained.

6. **Other requirements:** Freedom from any disease that might be imparted to others through the medium of milk; strength to do the general work of the dairy; at least a liking for farm animals; ability to attend to minute details; a grade of intelligence capable of understanding the scientific problems of dairying; ability to direct the work of others, and to attend to the important business side of dairying.
7. **Income:** The dairy employee earns higher pay than the unskilled farm laborer; the dairy foreman and superintendent receive from \$100 to \$150 a month up to several thousands of dollars a year. The proprietor of a dairy has an income dependent on his capital, business ability, and market facilities.
8. **Effect on the worker:** The occupation tends to preserve one's health, to increase one's years of service, and to give one an appreciation of country life and of the usefulness of animals to man.

9. **References:**

Gowin, E. B., and Wheatley, W. A. *Occupations*, 50-53.

Kober, G. M., and Hanson, W. C. *Diseases of Occupation and Vocational Hygiene*, 692 and 693, dairy industry.

McMahon, J. R. *How These Farmers Succeeded.*

Information upon modern dairying is given in most of the chapters of this volume.

Robison, Emily. *Vocational Education*, 241–263, agricultural education.

Smith, J. R. *Commerce and Industry*, 65–68.

Spillman, W. J. *Farm Science*. 235–243, breeds of cattle and their uses; 306–315, dairying.

Stimson, R. W. *Vocational Agricultural Education by Home Projects*. 168, bibliography; 242, larger animal projects.

Wilkinson, J. W. *Practical Agriculture*, 313–322, breeds of cattle.

Women's Employment Publishing Co. *Careers*, 196 and 197, dairy work for women; and 213, training and earnings.

Bulletins on dairying of the U. S. Department of Agriculture, state departments of agriculture, and agricultural colleges.

2. THE FARMER

1. **Importance:** Agriculture is the basal occupation of the world; it employs more workers than any other industrial occupation in city or country. One third of the people of the United States live upon the farms. The farmer provides the grains used for food, the wool and cotton used for clothing and other purposes, the meats, poultry and eggs, vegetables, sugar, and numberless other products necessary to human life.
2. **Tasks:** Planning farming projects, cultivating the soil, reclaiming waste land, raising live stock, dairying, orcharding, market gardening, managing or superintending farm activities, harvesting, marketing, road building, fence building, repairing tools and farm machinery and buildings. In short, farm activities include many forms, from chores to field work and business.
3. **Advantages:** Life in the open country, away from the crowding, confusion, and competition of large communities; the friendships and permanent neighborhood interests possible in the country; the companionship of plant and animal life; the health and vigor produced by farm work and living; the economic independence of successful farming; the fact that farm-

ing is a well balanced occupation, requiring both mental and physical effort every day; the real importance of the farmer's contribution to community and national service.

4. **Disadvantages:** The comparative isolation of farm life; the difficulty in some localities of obtaining the necessary comforts of life; the hard labor in house or dairy usually put upon the farmer's wife; the long hours of labor usually necessary; the wide range of duties and the need of constant and often arduous physical labor; the need of capital or income outside of the average farm, especially in making a beginning of farming; the lack of educational opportunities in many country localities; the difficulty of securing needed farm help; the seasonal nature of most farming, and the long deferred returns in some lines, such as orchard planting.
5. **Preparation:** The great proportion of workers on the soil have always learned by experience. Boys upon the farm have first done chores out of school hours, then become helpers in garden and field, and then full workers in the occupation or farm owners. In recent years, however, agricultural courses in high schools, separate and county schools, and colleges have been established. In this movement the United States has taken the lead. Such schools train for scientific farming in general and for farm management. Consult the accompanying historic treatment of the subject for farm management, fairs, farmers' institutes, and so on.
6. **Other requirements:** Love for the soil, and for domestic animals; good health and strength for active field work; versatility, to be able to do effectively the many tasks found upon the farm; patience to wait for harvest time or for animals to become salable or to reach maturity; habits of thrift and industry; good judgment and unmistakable business ability for farm management, which usually determine success in farming.
7. **Income:** The farm laborer, usually working by the month, now often receives as high wages as the shop worker. In the harvest season the daily wages vary from three to six dollars or more in various parts of the country. Often a home, or room and board, is provided in addition. The foreman, manager, or superintendent receives from \$1500 a year up to several thousand dollars. The owner of a farm usually makes a living for

his family, his greatest return being a home and the food raised on the farm. Many farms now carried on under scientific management bring a profit of thousands of dollars, ranking with large manufacturing and business establishments.

Inquire about farm earnings in your locality.

8. **Effect on the worker:** Farming tends to long life, health, and content. The great objection to it has been its narrowing effect on the life of the worker. The small farms of European countries, often little more than gardens, with their narrow interests, have produced the peasant classes of Europe. On the other hand, all-round farming, on a large scale, as practiced in the United States, has resulted in an intelligent class of farmers who have interest and influence in community and state and national affairs.

9. References:

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NOTES ON STUDYING THE OCCUPATION OF THE FARMER
IN CONNECTION WITH THE SUBJECT OF UNITED STATES HISTORY

1. Tilling the soil was the most important occupation in the early history of our country.
2. The first society for promoting farming was established at Philadelphia in 1785, upon the birth of a new nation whose chief interest was agriculture.
3. Fairs: The first agricultural show or fair in the United States was held at Washington in 1804. Since that time local, state, regional, and international agricultural societies have held annual fairs at which the chief exhibits or features of interest have been products of the soil, home canned goods, cattle, and horses. Such fairs have resulted in improved farm machinery and methods, increased production, improved breeds of live stock, and enlarged social acquaintance.
4. Agricultural schools and colleges: Under the Morrill Act of Congress in 1862 were established our first agricultural colleges, now found in all states in the Union. Agricultural secondary schools or high school agricultural courses are now very common in most states. Farm management, as a distinct study, is now given a very important place in agricultural education.
5. Farmers' institutes: The first farmers' institute was held in 1862 by the Massachusetts State Board of Agriculture. Now throughout the country, usually in the winter season, such institutes have taken the form of attendance upon short unit courses given at agricultural experiment stations and schools. These last for several days and supply expert teachers and lecturers upon farming problems. There are now held annually about 10,000 such courses, attended by about 4,000,000 of our farming population.
6. The Grange: "The National Grange of Patrons of Husbandry" was founded at Washington, D. C., in 1867. The

Grange now consists of thousands of organizations in farming communities devoted to improving agriculture and country social life.

Is there a Grange in your vicinity? If so, what are its activities? Does it conduct a coöperative store for its members?

7. **Farm demonstration:** Since 1904 the United States Department of Agriculture has sent out field agents to demonstrate methods and improvements to farmers by actual coöperation on the farm. To their efforts have been added those of agricultural college extension specialists and county extension agents.
8. **School gardens and prizes:** In recent years schools, societies, and government departments have come to offer prizes to boys and girls for excellence in the products of farm and garden.
9. **The coöperative marketing of farm products:** In certain sections of the country, where particular crops are raised on a large scale, coöperative marketing has been developed to give the farmer a just price for his products. Cotton, wool, milk, the cereals, fruits, and other crops are sold in this way. In California, for example, there are now large coöperative associations of fruit growers in individual lines, — one for orange growers, one for prune raisers, and so on.
10. **Kinds of farming in the United States:** Cotton, tobacco, and sweet potatoes are grown in the South. Where are our white potatoes grown? Where our cereals? Where does our sugar come from? What states lead in certain crops? What is the nature of the farming industry of your own state and of your own locality?

Make a table of the leading agricultural products of the country, showing the quantity of each raised and its chief sources. The statistics of the United States Department of Agriculture, facts in your geography, and seasonal crop reports in the public press will give you this information.

11. **The "back to the farm" movement:** Fifty years ago about two-thirds of the people of the country lived in the rural districts, and one-third in large towns and cities. The urban population has steadily increased and the rural has relatively decreased. Overcrowding in the large communities has brought about undesirable conditions and has helped to raise the cost of

living. In recent years much has been done to lead people to go back from the city to the country. Agricultural education is now keeping many boys and girls in the country, and making country life more attractive to all. States and communities are advertising their agricultural opportunities to attract people to live within their borders.

In the meantime many abandoned farms and suburban districts have been taken up by an incoming foreign population, to mingle with us in producing the "New American."

3. THE FARM LABORER

1. **Importance:** Manual labor is necessary for the carrying on of all kinds of farming. The owner of a small farm may himself do all the work required upon it, but a large proportion of all agricultural activity depends upon hired labor. The farm laborer, then, is absolutely essential in the production of food materials.
2. **Work done:** Ploughing and preparing land for cultivation; planting, hoeing, and harvesting; caring for stock and other farm animals; milking, and helping in dairy work; building and repairing fences and stone walls; driving teams; road building; doing chores and general work about the farm and farm buildings.
3. **Advantages:** Work out of doors; steady employment and a home; for a few farm workers, the good wages and limited hours now generally found in farm work; the advantages of country life; the opportunity of learning farming methods; the possibility of saving one's earnings and becoming a farm owner.
4. **Disadvantages:** The heavy manual labor required; the exposure to bad weather often necessary; the lack of social advantages usually suffered by the farm laborer; the seasonal nature of much of the work of farming; the small opportunity for advancement to foreman or superintendent, since men having superior ability or scientific training are usually taken for these positions.
5. **Preparation:** None, though experience in doing farm work is of great help in securing a position. Because of the present

scarcity of farm help men and boys entirely without experience are hired and given training by the farmer or his foreman.

6. **Other requirements:** A fair degree of health and physical strength; intelligence enough to follow directions and understand the nature of the work; an interest in farm work in itself; faithfulness to serve the interests of the employer; good morals and character, as the "hired man" often lives in his employer's family and is brought into contact with other persons in the neighborhood.
7. **Income:** Earnings in this occupation vary according to localities and seasons, running highest in the harvesting season. The wages of the farm laborer vary from \$20.00 or \$30.00 to \$60.00 or more a month, with room and board added in most cases. For seasonal employment wages are usually paid by the day, at the rates varying from \$2.00 to \$6.00.
8. **Effect on the worker:** Preservation of health and strength; lack of mental growth and a narrowing of one's knowledge of life outside the farm; a frequent disinclination towards having a family and home of one's own.
9. **References:**
Fowler, N. C. *Starting in Life*, 47-60.
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Kober, G. M., and Hanson, W. C. *Diseases of Occupation and Vocational Hygiene*, 670-672.
Robison, Emily. *Vocational Education*, 241-363, agricultural education.
Wilkinson, J. W. *Practical Agriculture*.
Willits, J. H. *Steadying Employment*, 31 and 32, agricultural labor.

4. THE FISHERMAN

1. **Importance:** Fishing provides an article of food used extensively throughout the world. It furnishes also many other valuable products, such as oils, fats, waxes, furs, leather, fertilizers, shells, pearls, ivory, glue, and sponges.

The industry has had a great influence on ship building, navigation, and commerce. A large percentage of the shipping of maritime countries is engaged in deep-sea fishing. Experience

in the industry has always provided the best sailors for the merchant marine in each country. Fishing is one of our important national industries.

The term fisherman is here used as meaning a life pursuit, not a recreation.

2. **Work done:** Preparing and caring for fishing lines, nets, and other apparatus; studying fish culture and the habits of fish; building and sailing boats and fishing vessels; fishing on small streams, rivers, lakes, gulfs, on coast waters, or on the deep sea; curing, preserving, and marketing fish products.

The greatest development in recent years in the work of fishing is the beam trawler used on the deep sea, which in a sense has introduced the factory method into the fishing industry.

3. **Advantages:** Out-of-door life; freedom in controlling one's own activities, except, for instance, when employed upon a fishing vessel; the opportunity to secure fresh fish for one's own family.
4. **Disadvantages:** The discomforts of working in inclement weather, or at night on land or sea; the extreme hazards of deep-sea fishing and of life in the Arctic regions; the uncertainty of success in particular times and seasons; the unattractive environment and associations usually attached to the occupation; the coarse fare and poor quarters generally provided on fishing vessels; the isolation and narrowness of life in the small fishing community, although the great bulk of commercial fishing is now done from big ports like Boston, Gloucester, New York, and Seattle.
5. **Preparation:** For ordinary fishing no training is required except such as comes by long practice. For fish culture scientific training in a technical school, including the study of biology, is desirable. For commanding a fishing vessel a knowledge of navigation, such as is provided by a nautical school or long experience at sea, is necessary.
6. **Other requirements:** Good health and strength; a fair grade of intelligence to understand the problems of the occupation; courage to meet its dangers; for deep-sea fishing, some knowledge of sea-faring life.

7. **Income:** The earnings of the occupation are very uncertain, being large at times and perhaps very small or nothing at all at other times. Men employed upon fishing boats usually share pro rata in the profits of fishing trips.
8. **Effect on the worker:** The fisherman usually becomes bronzed, hardy, and self-reliant, used to exposure and privation.
9. **References:**
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Smith, J. R. *Commerce and Industry*, chap. vi, fisheries.

5. THE FLORIST

1. **Importance:** The term florist is used here to mean the proprietor of a flower garden or greenhouse; it may elsewhere mean a dealer in flowers or a shop keeper. Besides the great pleasure that the cultivation and use of flowers have always given, their culture has become an industry of high social value in recent years, thousands of dollars being spent annually for them, especially in the cities.
2. **Work done:** The work of the flower gardener is much like that of the vegetable gardener. It consists of studying soils, fertilizers, seeds, and scientific methods of floriculture; planting, weeding, watering, spraying; gathering flowers, packing, making up orders, and preparing floral designs; selling to dealers or in one's own shop.
3. **Advantages:** The pleasures of raising flowers; the benefits of an out-door employment; the light nature of most of the work of the flower garden; the large profits possible in large communities; the permanency of employment for the skilled worker; service in an occupation that brings so much happiness to people in general and especially to the sick in the home or hospital.

4. **Disadvantages:** The need of special knowledge of many kinds of flowers; the seasonal nature of the occupation, since it is hard to grow and distribute flowers in cold weather; the losses resulting from unsold stock; the high cost of building, equipping, and maintaining greenhouses, since only limited production is possible without their use; the need of maintaining a florist's shop in many cases to secure all possible profit, thus combining an industry and a business under one ownership or management.
5. **Preparation:** High school training and study in an agricultural school or college are desirable for the florist. Attendance upon agricultural lecture courses and extension classes would be of value, for a general knowledge of soils, plants, and fertilizers. The florist needs a knowledge of botany, and zoology, of mechanics for the making and repair of equipment, of heat and heating systems for the maintenance of the greenhouse, and some familiarity with electricity for electric wiring and illumination of the greenhouse.
6. **Other requirements:** An appreciation of flowers; patience to grow them, and carefulness in handling them; taste for making up floral designs, courtesy and consideration for customers, especially in time of illness or bereavement; ability to manage the industry and handle its business side.
7. **Income:** A worker in a flower garden or greenhouse would earn about the same wages as in other special branches of agriculture; the owner in the industry would have profits dependent upon his skill in growing flowers, the extent of his market, and his business ability.
8. **Effect on the worker:** Continued health, good manners, and refinement; opportunity for recreation; an interest in community conditions; the satisfaction of community service. The proprietor or worker in a small establishment, however, may become narrowed to his environment.
9. **References:**
 Hoerle, H. C., and Saltzberg, F. B. *The Girl and the Job*, 76-79.
 Jones, Guy M., Co. *Trade Foundations*, 41, floriculturist.
 Kober, G. M., and Hanson, W. C. *Diseases of Occupation and Vocational Hygiene*, 367-369, skin affections of florists.

New York State College of Agriculture. *Autumn in the Flower Garden.*

— *How the Plant Produces Seed.*

Stanford University Committee on Vocational Guidance. *Vocational Information*, 20 and 21, floriculture.

Wilkinson, J. W. *Practical Agriculture*, chap. xxv, flower gardening.

6. THE FORESTER

1. **Importance:** The preservation of the forests determines the beautifying of the earth, a perpetual supply of timber for building, heating, and other purposes, and the maintenance of the flow of streams which yield our water supply. The United States Forest Service of the Department of Agriculture, State Forest Commissions, cities and towns, railroads, lumber companies, and private concerns now employ trained foresters. The Forest Service alone employs nearly 4000 men, although not all of them are technically trained. There are also a few consulting foresters who conduct private offices.
2. **Work done.** Planting and caring for forests and for trees in public parks or highways; selecting and cutting out trees for wood and lumber; making maps of forest areas and determining the amount and value of standing timber; protecting forests from fire and from diseases and insects by spraying and other preventive measures; surveying and building roads and bridges; managing forest lands.
3. **Advantages:** Life out-of-doors; opportunity for the study of nature; opportunity for travel in many cases; the good earnings and repute of the occupation; the permanency of employment under the Civil Service for those in public positions; the satisfaction of high professional public service.
4. **Disadvantages:** Long periods of living in the woods, away from one's home; the need of shifting about, frequently, from place to place; the necessity in most cases of establishing a home in a small community; the hard physical labor often called for in forest service; exposure to all extremes of weather.
5. **Preparation:** Graduation from high school, college, or technical school, and from a school of forestry; practical experience in

vacation or other time in service under a trained forester. One enters public employment in the occupation by means of the Civil Service examinations.

There are distinct grades of work in the public service for which there are various requirements. A forestry course should include the studies of botany, geology, zoology, physics, inorganic chemistry, forest mensuration, trigonometry and surveying, topography, something of civil engineering, economics, and a reading knowledge of French and German. Some of our foremost foresters have studied in the excellent schools of forestry of the Old World.

6. **Other requirements:** A liking for forest life; a rugged constitution; intelligence to do professional work; an interest in science; good judgment; strength to bear responsibility; executive ability.
7. **Earnings:** The United States Forest Service pays salaries up to \$3,750 a year; State Forest Commissions pay from \$2,000 to \$4,000 for head foresters and from \$1,000 to \$2,500 for assistants; earnings in private employment are about the same as in public.
8. **Effect on the worker:** The preservation of health and strength, an increased love of nature, and an enlarged spirit of service for the good of mankind.

9. **References:**

Bassett, S. W. *The Story of Lumber*.

Bishop, A. L., and Keller, A. G. *Industry and Trade*. Pp. 27-31, forests.

Boy Scouts of America, *Forestry*.

Noyes, William. *Handwork in Wood*, chap. i, logging.

Pinchot, Gifford. *The Training of a Forester*.

Pressey, Park. *A Vocational Reader*, pp. 43-48, with a forestry crew.

Smith, J. R. *Commerce and Industry*, chap. x, the forest industries and paper.

Stanford University Committee on Vocational Guidance, *Vocational Information*, p. 21.

Weaver, E. W., and Byler, J. F. *Profitable Vocations for Boys*, 260, forestry.

Women's Employment Publishing Co., *Careers*, 209 and 210, forestry for women; and 213, training.

7. THE FRUIT GROWER

1. **Importance:** This worker provides a large portion of the food of the human race, a portion that is absolutely necessary for the preservation of health and strength. Fruit growing is a leading division of agriculture in all countries and is of especial profit and interest in temperate climates and the longer summer season. It is the leading horticultural industry in America.
2. **Work done:** Studying soils, fertilizers, and the various kinds of fruit-bearing trees, vines, and shrubs; cultivating the soil; raising plants in the nursery; setting out and grafting trees in the orchard and shrubs and vines in the garden and in the field; pruning and spraying; gathering fruits; canning and preserving; marketing. It is easier to begin fruit growing on an established farm than upon new land.
3. **Advantages:** Outdoor life, and the enjoyments of trees and vines; the profits of scientific fruit culture; the constant demand for good, well graded fruit; the abundant supply of fruits possible for one's own use; the possibilities in the occupation for a person in poor health; the favorable climatic conditions, for human life, of the regions in which most fruits are grown; the permanent profits of most orchards, year after year; the quick returns of some kinds of fruits.
4. **Disadvantages:** The difficulties of the proper fertilization and cultivation of the soil; the poor returns for fruit growing in some localities; the cost of raising fruits in large quantities; the large amount of handwork necessary in this occupation; the fact that many fruits must be produced far from large markets; the losses that arise from insects and disease, overproduction, wide competition, the decay of fruits in storage, and in sending to distant markets; the difficulty often of getting labor; the difficulties of the small profits of off years in the growing of apples and some other fruits; the danger from low temperature, frosts, and freezing; the long period of waiting for profit in growing some kinds of fruits, and the short life of most fruit producing vines.
5. **Preparation:** A full course in an agricultural school, or fruit culture courses in high or technical schools, and experience in home fruit growing and in serving as a helper in orchard, field,

or garden; study and observation of the methods of successful fruit growers.

6. **Other requirements:** Enjoyment of nature; ability to do careful, painstaking work; patience to grow fruits and wait for full maturity; good intelligence to learn and put in practice scientific fruit culture; an understanding of fruits, or what is called "fruit sense"; good business ability to buy supplies and market fruits.
7. **Income:** The worker in this occupation earns rather more than in general farming because of the demand for a higher grade of intelligence and skill. The owner of an orchard, vineyard, or fruit farm has profits according to the magnitude of his fruit culture and his ability to manage production and handle the business side of the occupation.
8. **Effect on the Worker:** The prolongation of life and health; the satisfaction coming from daily work in orchard, field, and garden; a possible loss from the absence of social advantages in isolated localities.

9. **References:**

- Bishop, A. L., and Keller, A. G. *Industry and Trade*, 76-82, fruits.
- Bowsfield, C. C. *Making the Farm Pay*, 171-199, fruit raising and its profits.
- Forbes, B. C. *Men Who Are Making America*, 224-231, sketch of Minor C. Keith, founder of the United Fruit Company.
- Giles, F. M., and I. K. *Vocational Civics*, 40 and 41, the application of a science to peach growing in Michigan.
- Gowin, E. B., and Wheatley, W. A. *Occupations*, 58-60.
- Jones, Guy M., Co. *Trade Foundations*, 38-40.
- McMahon, J. R. *How These Farmers Succeeded*, 86-90.
- New York State College of Agriculture. *Culture of the Blackberry*.
- *Culture of the Grape*.
- *Culture of the Red and Black Raspberries and of Purple-Cane Varieties*.
- *Drying Fruits and Vegetables in New York State*.
- *Orchard Soil Management*.
- *Pruning*.
- *Top-Working and Bridge-Grafting Fruit Trees*.

Sears, F. C. *Productive Orcharding*.

Smith, J. R. *Commerce and Industry*, chap. iv, the fruit and canning industries.

Stanford University Committee on Vocational Guidance. *Vocational Information*, 22.

Stimson, R. W. *Vocational Agricultural Education by Home Projects*, 78 and 79, small fruit growing project study; 159, 163, and 169, bibliography; 231-230 and 408, courses of study.

8. THE GARDENER

1. **Importance:** Vegetables constitute a large and indispensable part of our food. They are necessary for the maintenance of health and have increased constantly in commercial value. Since the middle of the nineteenth century vegetable gardening has been carried on in the warmer sections of the country, as in the South Atlantic States and in California and Texas, to supply the northern markets out of season. In such localities there are entire communities whose sole industry is vegetable growing. The general farmer usually maintains a separate vegetable garden. In many cases green-houses are added to the garden, for growing young plants ahead of season or vegetables for the market. Flower gardening is sometimes included in the occupation.
2. **Work done:** Studying soils, fertilizers, and seeds; ploughing and planting; hoeing and weeding; watering; spraying to protect plants from diseases and insect pests; heating and caring for the green-house; harvesting, preserving, and caring for vegetables; and marketing.
3. **Advantages:** Life out-of-doors; the benefits of manual labor; the pleasure of raising vegetables; the satisfaction and health of living upon one's own fresh garden products; the economic independence possible under wise planning and industrious work; the permanency and attractiveness of one's home, in the country or in the suburbs of the large town or city.
4. **Disadvantages:** The isolation that marks the occupation in many cases; the physical labor usually necessary; the long hours and many kinds of work necessary to care for growing vegetables; the losses occurring in bad years; the lack of in-

come between seasonal crops; the cost of land and equipment necessary to enable a helper to become an owner; frequently the difficulty of reaching a convenient market.

5. **Education.** A high school, special school, or country school course and a course in an agricultural college are desirable for one who wishes to take charge of a garden or greenhouse, or to do responsible work. Training of value may also be secured in the classes carried on by agricultural colleges in local high schools and by the lecture courses provided for communities by the departments of agriculture and county farm bureaus in some states. Printed information may always be secured from such schools, departments, and bureaus.
6. **Other requirements:** An interest in nature; mental ability to meet the requirements of scientific gardening; some ability to do manual labor, but the physically handicapped may find here an occupation; a knowledge of greenhouse construction and heating systems; power of attention to details, patience, foresight, and business ability.
7. **Income:** The pay for expert work in agriculture has been constantly rising in recent years, and the demand is not yet supplied. Superintendents of market gardens and greenhouses receive from \$1,200 to \$3,000 or more a year, often with a house or rooms provided. Workers by the day or month receive from \$30 a month up, often with rooms and board furnished.
8. **Effect on the worker:** Increased health and appreciation of nature; habits of carefulness and economy; a sense of usefulness to the community; on the other hand there may be the dulling effects of partial solitude and narrow interests.
9. **References:**
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 De Vries, Hugo. *Plant-Breeding*.
 Filene, Catherine. *Careers for Women*, 43-45, the supervision of home gardens.
 Gowin, E. B., and Wheatley, W. A. *Occupations*, 56-58, gardening.

Green, S. B. *Vegetable Gardening*.

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McKeever, W. A. *Training the Boy*, 31-33, making the home garden.

New York State College of Agriculture. *Drying Fruits and Vegetables in New York State*.

— *Hotbeds and Cold Frames*.

— *How the Plant Produces Seed*.

— *Planning the Home Vegetable Garden: Growing Early Plants*.

— *Summer Care of the Home Vegetable Garden*.

Smith, J. R. *Commerce and Industry*. 75-85, the vegetable industries.

Stimson, R. W. *Vocational Agricultural Education by Home Projects*.

9. THE LUMBERMAN

1. **Importance:** The use of wood has been necessary in all ages for the welfare of the human race. The lumberman produces timber from the forest, for the erection of dwellings and other structures, for ship building, furniture manufacturing, and a thousand other purposes. Lumbering has always been one of our basic industries, and in the number of its workers, over eight hundred thousand, it is surpassed only by farming, rail-roading, and mining.
2. **Work done:** Studying and protecting forests, deciding upon methods of cutting out timber, road building, camp building, scaling or measuring standing timber and lumber, slashing or clearing out underbush, chopping, sawing, and piling lumber, building log slides, dams, and flumes, river driving, saw-milling, selling lumber and its milled products.
3. **Advantages:** Life in the forest and in the open; employment in a great staple industry; good profits under favorable conditions; the fact that the lumberman may run a saw mill, and thus realize more upon his lumber; the use of portable mills, which reduce costs of handling lumber and lengthen the work-

ing season; the fact that lumbering is becoming more scientific and more and more connected with the science of forestry.

4. **Disadvantages:** Great hardship and exposure in the forest in winter; the great hazards of fire connected with lumbering, and of danger in the forest and on lakes and streams; the great difficulty of securing employees to go into remote and dangerous regions in winter; the rough life and coarse elements usually found among lumbermen; the great isolation of the occupation; the seasonal nature of the industry in most localities; the need of great capital to carry on large lumbering occupations and to establish railroad lines and saw mills.
5. **Preparation:** One learns nearly all the work of lumbering by actual experience. Courses in forest engineering, wood utilization, pulp and paper making, and forestry would help in the industry, and training in civil and mechanical engineering would aid in road building and saw-milling. Business school courses would be of value in the management of the industry.
6. **Other requirements:** Vigorous health and strength; hardihood for long and severe exposure; willingness to live in isolated localities, and to undergo camp life and coarse food; ability to deal with woodsmen and to meet the labor questions of the industry; ability to manage and to handle the business problems of the industry.
7. **Income:** The worker in lumbering earns pay varying from \$2.00 to \$3.00 a day to \$7.00 or \$8.00, according to localities and the kinds of work involved. Foremen and superintendents receive still more. The lumberman as one who conducts lumbering operations may have large profits.
8. **Effect on the worker:** The vigor and self dependence usually produced by life in the forest and in the open; the loss of social refinements, and the acquiring in some degree of the customs and manners of forest localities. The lumberman is recognized as one of the most necessary of industrial leaders.
9. **References:**
Bassett, S. W. *The Story of Lumber.*
Bishop, A. L., and Keller, A. G. *Industry and Trade*, 245-252, lumber.
Forbes, B. C. *Men Who Are Making America*, 53-59, sketch

of Captain Robert Dollar, the foremost producer and exporter of lumber in the United States.

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Griffith, I. S. *Essentials of Woodworking*, chap. xi, lumbering and milling.

Jones, Guy M., Co. *Trade Foundations*, 45-58, lumbering.

Kober, G. M., and Hanson, W. C. *Diseases of Occupation and Vocational Hygiene*, 436, exposure to excessive cold and preventive measures; and 673 and 674, the lumber industry.

New York State College of Agriculture. *Methods of Determining the Value of Timber in the Farm Woodlot*.

Pinchot, Gifford. *The Training of a Forester*.

Rollins, F. W. *What Can a Young Man Do?* chap. 1, lumbering.

10. THE NURSERYMAN

1. **Importance:** The nurseryman grows young plants for the use of farmers, gardeners, fruit growers, florists, and others. He is usually associated with the seedsman, and the growing and selling of seeds and plants are often combined. Agricultural schools and colleges and the United States Department of Agriculture are giving increasing attention each year to the production and distribution of improved seeds and plants.
2. **Tasks:** Cultivating the soil as in ordinary agriculture; selecting and improving seeds and plants by scientific methods; propagating plants also by cutting, budding, grafting, and layering or rooting in the earth; spraying and caring for young plants; and marketing nursery products, which sometimes leads to the conduct of a retail business.
3. **Advantages:** Life out of doors; the light nature of most of the work, for an agricultural occupation; the lack of extreme competition in the industry, because of the training, experience, and capital necessary to establish it in a community; permanency of employment because of the value of the worker's knowledge and experience.
4. **Disadvantages:** The need of extended special training and experience and considerable capital to enter the industry on a profitable scale; the dangers of injury to nursery stock from

frosts, insects, and other blights; the seasonal nature of the occupation; the need of the most constant and painstaking care of young plants; the fact that the sale of nursery products is limited mostly to the more progressive farmers and others in agricultural pursuits, apple growing, for instance, having actually suffered a decline in this country since 1895; the need of extensive advertising to reach widely situated country districts.

5. **Preparation:** Training in an agricultural school or college or study in extension classes and lecture courses upon agriculture, with special attention given to seed growing and plant propagation. One may begin as a helper in a nursery, either with or without previous study, and secure training under an experienced foreman or superintendent. School attendance, however, is desirable in most cases and especially for those who wish to advance to management in the industry. An untrained man with the necessary capital may establish a nursery and carry it on by means of trained workers.
6. **Other requirements:** An interest in nature and in plant life; ability to do faithful detailed work; intelligence sufficient to understand the scientific side of the occupation; ability for management and for conducting the business side of the industry.
7. **Income:** The nursery employee earns about the same as skilled workers in other branches of agriculture, or from \$2.00 a day to \$5.00 or \$6.00, according to sections of the country and the magnitude of production in a nursery. For workers in steady employment wages are usually put on a monthly basis. Foremen and superintendents receive salaries varying from \$100 a month to several thousand dollars a year.
8. **Effect on the Worker:** The nurseryman is recognized as a useful worker in increasing and improving the national food supply; his work tends to refine rather than coarsen his nature, and to give him health and contentment; he has plenty of time between busy seasons for recreational or other activities.
9. **References:**
De Vries, Hugo. *Plant-Breeding*, chap. iv, the production of horticultural novelties by Luther Burbank.

- Gordon, Mrs. Ogilvie. *A Handbook of Employments*, 219–221.
Jones, Guy M., Co. *Trade Foundations*, 41 and 42.
Robison, Emily. *Vocational Education*, 241–263, agricultural education.
Sears, F. C. *Productive Orchardng*.
Spillman, W. J. *Farm Science*, chap. xi, plant propagation.
Weaver, E. W., and Byler, J. F. *Vocations for Boys*, 260, nurserymen and seed men.
Wilkinson, J. W. *Practical Agriculture*, chap. xxv, the propagation of plants.

11. THE POULTRY RAISER

1. **Importance:** Eggs and poultry are among our most essential food products. They are reckoned in this country as worth as much as the hay crop or wheat crop, more than three quarters of a billion dollars annually. While the general farmer produces a large part of this great food supply, the modern poultry raiser makes the industry his vocation, uses scientific methods, keeps busy throughout the year, and finds a ready market in almost any community. Modern cold storage systems tend to keep prices somewhat even throughout the year.
Poultry farming is made a part of general farming in most sections of the United States; in the extreme East and extreme West, however, it is largely carried on as a separate industry.
2. **Work done:** Raising chickens by the use of the incubator and by setting eggs under hens in the old way; rearing young chicks; caring for poultry in buildings and in open yards; preparing various kinds of feeds; constructing and repairing buildings and fences; selecting and improving breeds of poultry; marketing eggs and poultry.
3. **Advantages:** The light nature of most of the work of the occupation; the fact that the industry may be established on a small capital; the possibility of success on a small land area; the quick returns for labor and investment; the ample profits usually reached by the large scale, scientific production of eggs and poultry; the fact that persons without full health and strength and women and young people can profitably engage in the occupation, both as assistants and managers or proprietors.

4. **Disadvantages:** The great need of constant vigilance and unceasing effort; the dangers of losses from disease or neglect of poultry stock; the excessive dust found in most poultry houses and yards; the losses always resulting from goods in storage or in transit to distant markets; the objectionable surroundings of most poultry establishments, that must necessarily be conducted at some distance from the better localities.
5. **Preparation:** Training in an agricultural school or college, or in extension courses upon agriculture, would be desirable for conducting the industry on a large scale and by scientific methods. Experience under trained men is of great value, and often this is all that poultry raisers have for equipment. In all cases the constant use of the books, papers, and magazines of the industry is advisable.
6. **Other requirements:** An interest in farm and animal life; ability to do constant, faithful work and to give great attention to details; intelligence to understand the scientific features of the industry; mechanical skill for the construction and repair of building and equipment. A high degree of health and strength is not required, and one not able to do full or arduous work in another occupation, even a person having some physical handicap, may engage successfully in poultry raising or assist in the work.
7. **Income:** The helper employed in this division of agriculture receives about the same wages as in other agricultural activities, according to local conditions. One who conducts the industry under a moderate outlay may make a fair living from it; or with a large outlay and the most approved methods he may realize larger profits.
8. **Effect on the Worker:** A narrowing, often, of general interests, since poultry keeping is an absorbing work; the satisfaction, however, of producing important articles of food, and thus being a useful member of society.
9. **References:**
Blunt, Katherine, and Sprague, E. C. *Food and the War*.
Bowsfield, C. C. *Making the Farm Pay*, 244-274.
Filene, Catherine. *Careers for Women*, 37-42.
Giles, F. M., and I. K. *Vocational Civics*, 37 and 38, profits from poultry raising.

- Gowin, E. B., and Wheatley, W. A. *Occupations*, 53-55, the poultryman.
- Jones, Guy M., Co. *Trade Foundations*, 43 and 44, poultry farming; and 435-438, poultry house construction.
- Smith, J. R. *Commerce and Industry*, 73 and 74.
- Spillman, W. J. *Farm Science*, 251-255, poultry; 319-321, poultry raising on the farm.
- Stimson, R. W. *Vocational Agricultural Education by Home Projects*, 80 and 81, poultry keeping project study; 160, bibliography; 404 and 405, seasonal plan for poultry course.
- Wilkinson, J. W. *Practical Agriculture*, 231-234, poultry.
- Women's Employment Publishing Co. *Careers*, 207-208, poultry keeping for women; and 213, training.

12. THE STOCK RAISER

- 1. Importance:** The domestication of animals, which was necessary in all cases, is one of the great accomplishments of man. The production of live stock is one of the leading industries, consisting of raising cattle, horses, sheep, mules, hogs, and other large animals that may be used for work or for meat food. In the development of this country stock raising has followed the frontier as it moved westward, and until recently the great public lands and uncultivated areas of the West and South were our chief stock regions. Now stock raising is becoming the leading division of general farming throughout the country, and specialization in pure bred stock is on the increase.
- 2. Work done:** Selecting, raising, and caring for stock; growing hay, grain, and other forage for feeds, or buying and mixing feeds; erecting and repairing farm buildings; building and repairing fences; repairing farm tools and equipment; training animals, as the ox for work and the horse for work, for the saddle, and for pleasure driving; shearing sheep; herding animals, as on the western ranges; fattening beef cattle, sheep, and hogs for market; slaughtering animals in some cases; selling animals and attending to the business side of the industry.
- 3. Advantages:** Life out of doors; an occupation in which interesting work and even pleasure may be found in association with animal life; high service to the community; a constant demand for workers in stock regions; the increasing public

demand for meat food products; the large profits of successful stock raising; the fact that the industry can most profitably be combined with general farming, thus lessening the risk involved in a single kind of production.

4. **Disadvantages:** The arduous labor necessary in the occupation; the isolation of life in the regions usually given over to stock production; the special knowledge and care called for in raising young animals; the long period of time necessary to establish the industry on a profitable scale; the considerable capital necessary to own or hire land and to make a good beginning in the industry; the need of a wide knowledge always of market and financial conditions; the fact that in well populated communities sufficient land cannot often be secured for stock farming; the danger of contracting diseases from animals.
5. **Preparation:** Courses in agricultural schools, high schools, and college; attendance upon special lectures and agricultural fairs, institutes, demonstrations and farm bureau field trips; and experience under men who have had scientific training in agriculture.
6. **Other requirements:** A decided interest in animals; good health and strength for the work of the stock farm or range; good judgment for the selection, care, and feeding of animals; patience to wait for the growth of animals to a certain age or maturity before profits or even an income can be assured; mental ability for the scientific study and conduct of the industry; mechanical ability for work on buildings, fences, and equipment; executive and business ability.
7. **Income:** The employee on the stock farm or ranch usually has fair monthly wages, like other agricultural workers, and board and lodging. Some employees save sufficient earnings to become stockmen themselves. The profits of the stock raiser are in proportion to the number of animals he may raise and care for and by his managing and business ability.
8. **Effect on the Worker:** The stockman is likely to maintain vigor and good health until late in life; he has, however, little time for recreation or social pleasures away from his employment; some of the work and associations of the occupation are coarsening in their nature, as in the case of slaughtering ani-

mals; on the other hand the raiser of horses, cattle, or sheep, may be broadminded, intelligent, and a useful citizen, in many cases a leader in a rural community.

9. References:

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- Bowsfield, C. C. *Making the Farm Pay*, 58-74, live stock and feeds; and 95-97, sheep.
- Filene, Catherine. *Careers for Women*, 42 and 43.
- Gowin, E. B., and Wheatley, W. A. *Occupations*, 49 and 50.
- Jones, Guy M., Co. *Trade Foundations*, 28-30.
- Kober, G. M., and Hanson, W. C. *Diseases of Occupation and Vocational Hygiene*, 258-172, and 372-374, anthrax and other animal affections.
- McMahon, J. R. *How These Farmers Succeeded*.
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- *Computing Rations for Farm Animals*.
- *Making Advanced Registry Records*.
- *Practical Horse-Breeding*.
- *Problem of Tuberculosis in Cattle*.
- *Starting a Flock of Sheep*.
- Smith, J. R. *Commerce and Industry*, 50-73, raising of stock, sheep, and horses.
- Spillman, W. J. *Farm Science*, Part III, the animal; Part IV, chap. xx, live stock enterprises.
- Wilkinson, J. W. *Practical Agriculture*, chap. xlii-xliv, stock feeding, animal husbandry, and domestic animals.

SUPPLEMENTARY OCCUPATIONS

There are numerous other kinds or subdivisions of workers found in connection with Agriculture, Forestry, and Animal Industry. Each of them, however, employs fewer persons than the occupations already analyzed, is limited in opportunity, and of less interest to our present study. The special workers that may be treated here briefly, without formal analysis, are the following:

THE APIARIST

THE COTTON PICKER

THE MILKMAN

THE PLANTER

THE TEAMSTER

THE WOODCHOPPER

For the remaining workers in this supplementary list there is scant printed information available. The work of each, however, is fairly well known, especially in rural communities, and teacher and pupil by inquiries among workers may easily supplement the brief summaries presented here. They may also consult cyclopedias, U. S. Census reports, reports of National and state agricultural departments, and agricultural papers and magazines for general information upon the industries concerned. The cotton grower is a farmer in a special line, while the cotton picker is a farm laborer. The planter also is a special farmer, growing one of such crops as rice, potatoes, sugar, coffee, or tobacco. The term is used mainly in the South, and frequently to indicate the owner of a plantation. The milkman may be a farm employee or the employee of a commercial milk distributor. The teamster and wood-chopper are often farm laborers but are also found in several other industries, such as lumbering.

The first of this supplementary list, the apiarist or bee keeper, may be treated briefly by the plan followed with the leading occupations presented in this study.

13. THE APIARIST

1. **Importance:** Scientific bee keeping began in the United States in 1852 with the patenting of a hive with movable frames. This made bee keeping profitable enough to be adopted in many parts of the country where nectar-secreting plants were found. The consumption of honey was greatly increased during the World War and various new ways of using it were developed. As the supply of nectar-producing plants in many sections is practically unlimited there are great possibilities for the future of bee keeping.
2. **Work done:** Caring for the hives and for the swarms of bees out of doors, extracting honey from the comb, bottling and labeling it, and selling it.
3. **Advantages:** The occupation of the apiarist is a clean, interesting, out-of-door calling. It can be carried on in connection with general farming or almost any other pursuit found in country districts. It may produce a good financial return without severe labor, and may be entered with small capital, a hive of bees

often paying for itself in a single year. A person with considerable physical handicap may easily succeed in bee culture. The occupation is especially suitable for women and many are found in it.

4. **Disadvantages:** On the other hand the work calls for careful attention to many details and requires exact knowledge of the habits of bees. There is some danger in handling them, and contagious diseases are frequently found among them. Heavy lifting is sometimes necessary. The occupation extends through only about one-half of the year.
5. **Preparation:** The principles of bee culture may be learned in agricultural schools and colleges, and useful information may be secured in the special bulletins of agricultural departments.
6. **Other requirements:** Considerable previous experience in helping or in carrying on the industry on a small scale is necessary for success on a large scale. The apiarist should have a fair degree of intelligence, patience and skill in caring for minor details, mechanical ability, and some knowledge of nectar-producing plants.
7. **Income:** Unless followed on a large scale and by scientific methods bee culture does not yield a sufficient income by itself to be a means of support for a family. It serves well as an addition to some other employment or as an added item in farm income.
8. **Effect on the worker:** Caring for bees is likely to increase the intelligence of the worker, to enlarge his interest in nature, and to preserve his health and strength.
9. **References:**
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14. THE COTTON PICKER

Cotton is the most valuable fabric material used by man. It serves for clothing for over one-half of the human race and for numberless other purposes. The United States produces about two-thirds of the cotton crop of the world and exports over one-half of this quantity. It is our leading agricultural product and article of export. The Southern States comprise our great cotton region. It is grown also in Brazil, Egypt, and India.

Gathering the cotton must be done by hand, as no suitable machinery has yet been devised for that purpose; thus picking is the main activity and problem of cotton farming. The industry must be carried on in warm or temperate climates, which are very exhausting to the white races, and in this country it has long been associated with negro labor. Through the last one or two months of the season the cotton picker goes into the field and gathers the ripe bolls from the growing plants. He walks along row by row, carrying a large basket to hold the loose cotton. It is later sorted carefully into grades and baled for the market. The picker must help in general farm work on the cotton crop or on other crops.

15. THE MILKMAN

The milkman renders an important service in delivering milk and cream fresh to the homes of people in towns and cities. As a dairy farm employee he may have to help in milking and caring for the dairy when not out with the milk team or automobile truck. As the employee of a milk company in a large community he may have to attend to milk delivery only. He may sometimes have to collect money from customers.

The work is not heavy, but requires great activity in jumping off and on wagons or motor trucks and hurrying from door to door in the case of long milk routes and in climbing stairways. It calls for early hours of delivery in large towns and cities, often running from one or two o'clock in the morning to nine or ten or later in the forenoon. The work must be done day by day without regard to weather. If the milkman goes out alone, as is more often the case, he must drive his team or truck and deliver milk at the doors of customers as well. Sometimes a second man or boy goes along as a helper, to do most of the actual delivery. On the other hand the

occupation provides steady employment at pay rather above that of unskilled workers because of its exacting nature. On the farm room and board are frequently provided.

The milkman should understand horses if he acts as driver of a team, or motor vehicles if he has to drive a truck. He must usually be well and active and able to withstand exposure in severe weather. If employed on the farm he should be familiar with the feeding and care of cows and with the handling of milk in the dairy. He should be intelligent, courteous, trustworthy, and able to handle such money and accounts as may be necessary in his daily work. He represents his employer to the customer. The small dairyman may deliver his own milk; the large distributor may employ many milkmen.

16. THE TEAMSTER

The teamster is a driver of a team of horses, mules, or oxen, where such means of hauling are still in use, as on the farm, in lumbering, railroad building or other constructive work, and in transportation. In the great cities and their suburbs the auto truck has largely displaced the team, but it has not yet done so in the country districts.

The work of the teamster is arduous in most cases. It usually involves the care of the team before and after hours of hauling, and frequently heavy lifting in the loading and unloading of wagons. There is danger of injury in handling heavy articles and from accidents in the stable or on the road, as well as from exposure in severe weather. The driving of a team, however, is to many men an agreeable occupation, and in many cases the articles carried are not difficult to handle. The work keeps one in the open air, and may be followed late in life, since skill in the handling of a team is a permanent asset to the worker. Very frequently helpers are employed for loading and unloading and the teamster does little but care for and drive the team. His earnings are above those of the unskilled laborer.

The chief requirements for this occupation are fair health, strength to meet exposure and to do hard work, a decided liking for animals and an understanding of their right use, self control, good judgment, and power to bear responsibility.

17. THE WOODCHOPPER

In earlier times, from the pioneer days on, the woodchopper did a very important service in clearing the country for cultivation and in providing wood and lumber for the settlers. There are still extensive forest regions in various parts of the country which are now preserved by the careful cutting out of wood and lumber. The chopper may work on the farm, cutting and preparing wood for home use or cord wood for the market; he may be employed in lumbering to fell trees and to clear away trees and brush or as a helper; or he may cut ties for railroad building. He may also be employed to hew railroad ties and rough timbers for building purposes, and in many cases the use of the "cross-cut" or two-handed saw is necessary. The chopper usually has to handle wood and lumber.

The occupation has the advantages of life in the country and in the forest. The work is hard, since it means the wielding of an axe steadily hour by hour, with considerable heavy lifting. It cannot be done well in summer weather, so it usually becomes a seasonal occupation, extending from early fall to late spring. It is frequently necessary for woodchoppers to camp in the woods through the winter, and to undergo the disadvantages of isolation, severe weather, and privation. There is danger of getting cut by an axe or of receiving injury from a saw or other tool or in felling timber and piling logs. The vigorous, skillful chopper earns good wages, working by the day, by the cord, or by the job. The farmer and the farm laborer, of course, often do wood and timber cutting.

The woodchopper should have vigorous health and strength, and hardihood to undergo the privations of life in the woods and of camping. He should have skill in using tools, and frequently the ability to cook and to care for a camp.

18. THE HOMEMAKER ON THE FARM

It seems well to add here a brief study of the homemaker, to show something of the actual nature of domestic work on the farm. The homemaker may be the farmer's wife, daughter, other relative, or an employed housekeeper. Students may easily secure information to supplement this treatment of the occupation.

1. **Importance:** The home is the foundation of society and of the state. The woman head of the country family is the chief worker in the home. She is largely responsible for the material, social, moral, and spiritual welfare of the family and of the community.
2. **Work Done:** Planning the activities of the household, buying, cooking, caring for children, sewing and mending, washing and ironing, cleaning, caring for milk and butter, canning and preserving, often caring for a flower garden, sometimes caring for poultry, and numberless other duties of varying kinds.
3. **Advantages:** The independence of country life; the possibility of spending some time in the open air; happiness in one's own home, and with one's own children; the permanent and intimate friendships that often exist in the country; the social enjoyments of church, grange, or other organization.
4. **Disadvantages:** The loneliness of life in the country, especially during the winter; the lack of educational and social advantages for one's children and oneself; the lack of labor saving devices in many country homes and the consequent overworking of farm women; the constant round of duties which keep the woman tied to her home, not allowing her a necessary annual vacation; the necessity sometimes of association with undesirable neighbors or farm workers; the narrowness, loss of idealism, and loss of ambition that may result from lack of inspiring associates and surroundings; the lack of money when crops are a failure.
5. **Preparation:** A high school and liberal arts course if possible, followed by a modern course in homemaking or domestic science. Some knowledge of nursing, extending to first aid treatment at least, is desirable.
6. **Other Requirements:** Good character, health, unselfishness, thoughtfulness for others, resources within oneself to avoid loneliness, good taste, managing and business ability.
7. **Income:** A home and often full legal ownership of it, and ample spending money under normal conditions. The employed housekeeper has fair wages in most communities at the present time.

8. **Effect on the Worker:** In the well managed and well equipped household the homemaker may become broad-minded, public spirited, and useful in the community; while the reverse is true in the home or locality where modern advantages are lacking.

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19. FARMS AND FARM VALUES IN THE UNITED STATES

The Bureau of the Census, of the Department of Commerce, announces, subject to correction, the following preliminary figures from the 1920 census of agriculture, for the United States with comparative figures for 1910.

NUMBER, ACREAGE, AND VALUE OF FARMS IN THE UNITED STATES: 1920 AND 1910

	January 1, 1920	April 15, 1910
Number of farms.....	6,448,366	6,361,502
Land in farms — acres.....	955,676,545	878,798,325
Value of land and buildings.....	\$67,795,965,384	\$34,801,125,697
Average value of land and buildings:		
Per farm.....	\$10,514	\$5,471
Per acre of land in farms.....	\$70.94	\$39.60

CHANGES BETWEEN 1910 AND 1920

	Amount	Per cent
Number of farms — increase.....	86,864	1.4
Land in farms — increase — acres.....	76,878,220	8.7
Value of land and buildings — increase ...	\$32,994,839,687	94.8

The number of farms in the United States in 1920, according to the Fourteenth Census, was 6,448,366, as compared with 6,361,502 in 1910, showing an increase of 1.4 per cent. The total area of land in farms in 1920 was 955,676,545 acres, as against 878,798,325 acres in 1910, showing an increase of 8.7 per cent.

VALUE OF FARMS

The value of all farms in the United States on January 1, 1920 (value of land and buildings), was \$67,795,965,384, as compared with \$34,801,125,697 on April 15, 1910. The increase in the value of farms during the decade was \$32,994,839,687, or 94.8 per cent. It thus appears that while there was only a slight increase in the number of farms between 1910 and 1920 and an increase of less than 10 per cent in the farm acreage, the value of farms nearly doubled.

Due allowance must be made, of course, for the fact that farm values in many localities were abnormally high at the beginning of the year 1920, and that present values might be considerably less than those reported at the time of the census.

Seven states reported values for farm land and buildings in excess of \$3,000,000,000, as follows: Iowa, \$7,601,772,290; Illinois, \$7,416,583,951; Nebraska, \$3,723,536,255; Texas, \$3,717,799,544; Minnesota, \$3,301,168,325; California, \$3,073,811,109; and Missouri, \$3,062,967,700.

AVERAGE VALUE PER FARM

The average value of land and buildings per farm for the United States as a whole in 1920 was \$10,514, as compared with \$5,471 in 1910.

In five states the average value reported per farm was above \$25,000. These states were Iowa, \$35,616; South Dakota, \$33,122; Illinois, \$31,270; Nebraska, \$29,927; and California, \$26,122.

AVERAGE VALUE PER ACRE

The average value of land and buildings per acre of land in farms in the United States in 1920 was \$70.94, as compared with \$39.60 in 1910.

An average value of more than \$100 per acre was reported for eight states, as follows: Illinois, \$231.93; Iowa, \$227.09; Indiana, \$125.98; Ohio, \$113.18; New Jersey, \$109.67; Minnesota, \$109.23; California, \$104.67; and Connecticut, \$100.20.

NUMBER, ACREAGE, AND VALUE OF FARMS IN THE UNITED STATES, BY GEOGRAPHIC DIVISIONS AND STATES: 1920 AND 1910

DIVISION OR STATE	NUMBER OF FARMS		LAND IN FARMS (ACRES)		VALUE OF FARM LAND AND BUILDINGS		AVERAGE VALUE OF LAND AND BUILDINGS			
	1920	1910	1920	1910	1920	1910	Per farm		Per acre	
							1920	1910	1920	1910
UNITED STATES	6,448,366	6,361,502	955,676,545	878,798,325	\$67,795,965,384	\$34,801,125,697	\$10,514	\$5,471	\$70.94	\$39.60
GEOGRAPHIC DIVISIONS:										
New England	156,564	188,802	16,990,642	19,714,931	917,468,584	718,544,808	5,860	3,806	54.00	36.45
Middle Atlantic	425,149	468,379	40,554,158	43,191,056	3,005,640,486	2,442,949,103	7,070	5,216	74.11	56.56
East North Central	1,084,744	1,123,489	117,739,160	117,929,148	16,357,408,156	8,873,991,594	15,080	7,899	138.93	75.25
West North Central	1,096,973	1,109,948	256,973,874	232,648,121	24,480,727,074	11,614,665,870	22,317	10,464	95.27	49.92
South Atlantic	1,158,976	1,111,881	97,806,524	103,782,255	5,204,968,813	2,486,436,474	4,491	2,236	53.22	23.96
East South Central	1,051,600	1,042,480	78,954,063	81,520,629	3,665,189,438	1,738,397,839	3,485	1,668	46.42	21.32
West South Central	996,087	943,186	173,156,841	169,149,976	6,331,224,217	3,128,596,882	6,356	3,317	36.56	18.50
Mountain	244,109	183,446	117,348,578	59,533,420	3,163,921,882	1,319,396,873	12,961	7,192	26.96	22.16
Pacific	234,164	189,891	56,152,705	51,328,789	4,669,416,734	2,478,146,254	19,941	13,050	83.16	48.28

20. OCCUPATIONS AND OCCUPATION GROUPS IN AGRICULTURE, FORESTRY, AND ANIMAL INDUSTRY

According to the Federal Census

Dairy farmers.

Dairy farm laborers.

Farmers.

Farm laborers.

 Farm laborers (home farm).

 Farm laborers (working out).

 Turpentine farm laborers.

Farm, dairy farm, garden, orchard, etc., foremen.

 Dairy farm foremen.

 Farm foremen.

 Garden and greenhouse foremen.

 Orchard, nursery, etc., foremen.

Fishermen and oystermen.

Foresters.

Gardeners, florists, fruit growers, and nurserymen.

 Florists.

 Fruit growers and nurserymen.

 Gardeners.

 Landscape gardeners.

Garden, greenhouse, orchard, and nursery laborers.

 Cranberry bog laborers.

 Garden laborers.

 Greenhouse laborers.

 Orchard and nursery laborers.

Lumbermen, raftsmen, and woodchoppers.

 Foremen and overseers.

 Lumbermen and raftsmen.

 Teamsters and haulers.

 Woodchoppers and tie cutters.

Owners and managers of log and timber camps.

Stock herders, droviers, and feeders.

Stock raisers.

Other agricultural and animal husbandry pursuits.

Apiarists.

Corn shellers, hay balers, grain threshers, etc.

Ditchers (farm).

Poultry raisers and poultry yard laborers.

Other and not specified pursuits.

A GUIDE TO THE STUDY OF OCCUPATIONS

*A Selected Critical Bibliography of the Common
Occupations with Specific References for Their Study*

BY

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III. MANUFACTURING AND MECHANICAL INDUSTRIES.

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V. TRADE.

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VII. PROFESSIONAL SERVICE.

VIII. DOMESTIC AND PERSONAL SERVICE.

IX. CLERICAL OCCUPATIONS.

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